WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. A method of operating a flue gas purifying plant (10) having at least one absorber chamber (11) in which CO and NO are oxidized simultaneously by means of a catalyst in a first absorber (15) according to the SCONOx principle and the resulting NO_2 is absorbed on the catalyst surface, in which, furthermore, SO_2 is oxidized by means of a catalyst in a second absorber (14) connected upstream of the first absorber (15) according to the SCOSOx principle and the resulting SO_3 is absorbed on the catalyst surface, in which method the absorber chamber (11) is separated from the flue gas flow in regularly recurring regeneration cycles and is regenerated by means of a regeneration gas containing hydrogen and/or hydrogenous compounds, the two absorbers (14, 15) of the absorber chamber (11) being regenerated one after the other, characterized in that regeneration gas flows through the two absorbers (14, 15) against the direction of the flue gas flow during the regeneration.

2. The method as claimed in claim 1, characterized in that the regeneration gas, in the direction of the flue gas flow, is in each case fed downstream of the absorbers (14, 15) and is discharged upstream of the second absorber (14).

3. The method as claimed in either of claims 1 or 2, characterized in that, during the regeneration phase, the second absorber (14) is regenerated first and then the first absorber (15) is regenerated.

4. An apparatus for carrying out the method as claimed in claim 1, comprising at least one absorber chamber (11) which lies in the flue gas flow and can be

separated from the flue gas flow from time to time, preferably by dampers (12, 13), and in which the two absorbers (14, 15) are arranged one behind the other in the direction of the flue gas flow, characterized in that, in the direction of the flue gas flow, a feed line (27, 28) provided with an inlet valve (17, 19) and intended for the regeneration gas opens into the absorber chamber (11) in each case downstream of each of the two absorbers (14, 15) in the direction of the flue gas flow, and in that a discharge line (21) provided with an outlet valve (16) and intended for the used regeneration gas branches off from the absorber chamber (11) upstream of the second absorber (14) in the direction of the flue gas flow.

5. The apparatus as claimed in claim 4, characterized in that a reformer (20) is provided for producing the regeneration gas, to which reformer (20) natural gas (22) or other hydrocarbons and steam (23) are fed, and in that the feed lines (27, 28) are connected to the outlet of the reformer (20).